

Still another object of the present invention is to provide compositions comprising blends of an electroprocessed natural material, an electroprocessed synthetic material and a substance.

Another object of the present invention is to provide compositions
5 comprising an electroprocessed synthetic material and a substance.

It is an object of the present invention to provide compositions comprising an electroprocessed material and a substance, wherein the substances comprises comprising cells.

Another object of the present invention is to provide compositions
10 comprising an electroprocessed material and a substance, wherein the substance comprises an object.

Still another object of the present invention is to provide compositions comprising an electroprocessed material and a substance, wherein the substance comprises a molecule.

15 Yet another object of the present invention is to provide compositions comprising an electroprocessed material and a substance, wherein the substance comprises a therapeutic molecule.

Another object of the present invention is to provide compositions comprising an electroprocessed material and substances comprising combinations
20 of cells, molecules, and/or objects.

Another object of the present invention is to provide methods for delivery of a substance to a location, comprising placing the composition of the present invention at a desired location.

25 Still another object of the present invention is to provide methods for delivery of substances to a location inside or upon the body of a human or animal.

Yet another object of the present invention is to provide methods for retrieval of substances from a location inside or upon the body of a human or animal by bonding such substances.

30 Yet another object of the present invention is to provide methods for delivery or retrieval of substances to *in vitro* locations.

Another object of the present invention is to provide methods for delivery of drugs *in vivo*.

35 Yet another object of the present invention is to provide methods of administering gene and or peptide therapy.

Another object of the present invention is to provide methods of protein or peptide therapy.

Still another object of the present invention is to provide methods of administering tissue and organ replacements and prostheses.

5 Another object of the present invention is to provide methods for making the compositions of the present inventions.

These and other objects, features and advantages of the present invention will become apparent after a review of the following detailed description of the disclosed embodiments and the appended drawings.

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BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a schematic drawing of an embodiment of an electroprocessing device including the electroprocessing equipment and a rotating wall bioreactor.

15 Figure 2 is a schematic drawing of an embodiment of an electroprocessing device including the electroprocessing equipment and a rotating wall bioreactor.

Figure 3 is a graph showing the release profile of vascular endothelial growth factor (VEGF) from one embodiment of the present invention obtained by electropinning a solution comprising collagen, polylactic acid (PLA),
20 polyglycolic acid (PGA), and VEGF.

Figure 4 is a graph showing the release profile of VEGF from an embodiment of the present invention obtained by electropinning a solution comprising collagen, polylactic acid, and polyglycolic acid, and VEGF and subsequently cross-linking
25 the electroprocessed material by exposure to glutaraldehyde vapor.

Figure 5 is a graph showing the release profile of tetracycline from several embodiments of the present invention obtained by electropinning solutions containing tetracycline along with PLA, poly(ethylene-co-vinyl acetate) or a combination of PLA and poly(ethylene-co-vinyl acetate).
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Figure 6 is a graph comparing the release profile of tetracycline from an embodiment of the present invention and several other compositions. The
35 embodiment of the present invention was obtained by electropinning a solution

containing tetracycline with poly(ethylene-co-vinyl acetate). The other compositions were periodontal fibers containing 25wt% tetracycline hydrochloride and films containing tetracycline with polylactic acid, poly(ethylene-co-vinyl acetate) or a combination of polylactic acid and poly(ethylene-co-vinyl acetate).

Figure 7 is a graph showing the release profile of tetracycline from several embodiments of the present invention obtained by electrospinning solutions containing tetracycline with poly(ethylene-co-vinyl acetate).

Figure 8 is a schematic drawing of another embodiment of an electroprocessing device including the electroprocessing equipment and a rotating wall bioreactor.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The term "substance" shall be used throughout this application in its broadest definition. The term substance includes one or more molecules, objects, or cells of any type or size, or combinations thereof. Substances can be in any form including, but not limited to solid, semisolid, wet or dry mixture, gas, solution, suspension, combinations thereof. Substances include molecules of any size and in any combination. Cells include all cell types of prokaryotic and eukaryotic cells, whether in natural state or altered by genetic engineering or any other process. Cells can be from a natural source or cultured in vitro and can be living or dead. Combinations of different types of cells can be used. Objects can be of any size, shape, and composition that may be combined with or coupled to an electroprocessed material. Examples of objects include, but are not limited to, cell fragments, cell debris, fragments of cell walls, fragments of viral walls, organelles and other cell components, tablets, viruses, vesicles, liposomes, capsules, nanoparticulates, and other structures that serve as an enclosure for molecules. The compositions of the present invention may comprise one substance or any combination of substances.

The terms "electroprocessing" and "electrodeposition" shall be defined broadly to include all methods of electrospinning, electrospraying, electroaerosoling, and electrosputtering of materials, combinations of two or more such methods, and any other method wherein materials are streamed, sprayed, sputtered or dripped across an electric field and toward a target. The